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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 10

Complete if Known

Application Number	10/701,992
Filing Date	November 4, 2003
First Named Inventor	Hetherton et al.
Art Unit	3729
Examiner Name	Thiem D. Phan
Attorney Docket Number	MP1705-US4

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-2,482,316	09-20-1949	Bocking	
		US-3,221,145	11-30-1965	Hager, Jr.	
		US-3,351,882	11-07-1967	Kohler et al.	
		US-3,435,399	03-25-1969	Gielisse et al.	
		US-3,497,859	02-24-1970	Bang	
		US-3,648,364	03-14-1972	Endo	
		US-3,775,725	11-27-1973	Endo	
		US-3,835,434	09-10-1974	Kahn	
		US-4,088,828	05-09-1978	Yamamoto et al.	
		US-4,200,970	05-06-1980	Schonberger	
		US-4,237,441	12-02-1980	van Konynenburg et al	
		US-4,238,812	12-09-1980	Middleman et al	
		US-4,255,698	03-10-1981	Simon	
		US-4,272,471	06-09-1981	Walker	
		US-4,304,987	12-08-1981	van Konynenburg	
		US-4,315,237	02-09-1982	Middleman et al	
		US-4,317,027	02-23-1982	Middleman et al	

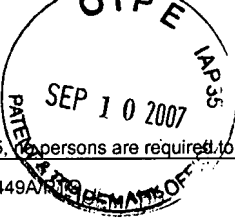
FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		DE-2816593-A1	10-18-1979	Siemens AG (Grube et al.)		<input type="checkbox"/> Abstract
		DE-3122612-A1	12-23-1982	Draloric Electronic GmbH (Schurmann)		<input type="checkbox"/> Abstract
		DE-3839868-A1	06-08-1989	Murata Mfg. Co., Ltd. (Uchida; US 4,924,204)		<input type="checkbox"/> counterpart
		DE-3910861-A1	11-02-1989	Murata Mfg. Co., Ltd. (Uchida; US 4,997,309)		<input type="checkbox"/> counterpart

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Considered

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PTO/SB/08a (07-06) (modified)



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Sheet	2	of	10	Application Number	10/701,992
				Filing Date	November 4, 2003
				First Named Inventor	Hetherton et al.
				Art Unit	3729
				Examiner Name	Thiem D. Phan
				Attorney Docket Number	MP1705-US4

(Use as many sheets as necessary)

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		US-4,327,351	04-27-1982	Walker	
		US-4,330,703	05-18-1982	Horsma et al	
		US-4,352,083	09-28-1982	Middleman et al	
		US-4,371,860	02-01-1983	May et al.	
		US-4,388,607	06-14-1983	Toy et al	
		US-4,426,633	01-17-1984	Taylor	
		US-4,434,416	02-28-1984	Schonberger	
		US-4,445,026	04-24-1984	Walker	
		US-4,463,407	07-31-1984	Berger et al.	
		US-4,475,138	10-02-1984	Middleman et al	
		US-4,486,737	12-04-1984	Ott	
		US-4,486,738	12-04-1984	Sadlo et al.	
		US-4,514,620	04-30-1985	Cheng et al	
		US-4,529,960	07-16-1985	Uchida et al.	
		US-4,534,889	08-13-1985	van Konynenburg et al	
		US-4,545,926	10-08-1985	Fouts et al	
		US-4,560,498	12-24-1985	Horsma et al	

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		DE-4000089-A1	07-12-1990	Mitsubishi Denki KK (Otsubo; US 5,017,243)		<input type="checkbox"/> counterpart
		DE-8716103-U1	03-03-1988	Degussa AG		<input checked="" type="checkbox"/> partial
		EP- 0509582-A2	10-21-1992	N.V. Philips Gloeilampenfabrieken (Schat)		<input type="checkbox"/> N/A
		EP-0223404-A1	05-27-1987	Raychem Corporation (Kleiner et al.)		<input type="checkbox"/> N/A

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				First Named Inventor	Hetherton et al.
				Art Unit	3729
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Sheet	3	of	10	Attorney Docket Number	MP1705-US4

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		US-4,591,700	05-27-1986	Sopory	
		US-4,593,181	06-03-1986	Jensen et al.	
		US-4,605,471	08-12-1986	Mitchell	
		US-4,660,017	04-21-1987	Momoki et al.	
		US-4,689,475	08-25-1987	Matthiesen	
		US-4,706,060	11-10-1987	May	
		US-4,714,910	12-22-1987	Schwingenschuh et al.	
		US-4,724,417	02-09-1988	Au et al	
		US-4,757,298	07-12-1988	Nishikawa et al.	
		US-4,757,581	07-19-1988	Yamada et al.	
		US-4,774,024	09-27-1988	Deep et al	
		US-4,777,718	10-18-1988	Henderson et al.	
		US-4,780,598	10-25-1988	Fahey et al	
		US-4,786,888	11-22-1988	Yoneda et al.	
		US-4,788,523	11-29-1988	Robbins	
		US-4,800,253	01-24-1989	Kleiner et al	
		US-4,801,784	01-31-1989	Jensen et al.	

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		EP-0308306-A1	03-22-1989	Compagnie Europeenne de Composants Electroniques LCC (Mallez et al.)		<input type="checkbox"/> Abstract
		EP-0398811-A2	11-22-1990	Fujikura Ltd. (Yamada et al.)		<input type="checkbox"/> N/A
		EP-0649562-B1	03-04-1998	Raychem Corporation (Graves et al.)		<input type="checkbox"/> N/A

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				First Named Inventor	Hetherton et al.	
				Art Unit	3729	
Examiner Name	Thiem D. Phan					
Attorney Docket Number	MP1705-US4					
Sheet	4	of	10			

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		US-4,811,164	03-07-1989	Ling et al.	
		US-4,845,838	07-11-1989	Jacobs et al.	
		US-4,861,966	08-29-1989	Matthiesen et al.	
		US-4,873,508	10-10-1989	Ankenman et al.	
		US-4,876,439	10-24-1989	Nagahori	
		US-4,882,466	11-21-1989	Friel	
		US-4,904,850	02-27-1990	Claypool et al.	
		US-4,907,340	03-13-1990	Fang et al.	
		US-4,924,074	05-08-1990	Fang et al.	
		US-4,924,204	05-08-1990	Uchida	
		US-4,924,205	05-08-1990	Caporali et al.	
		US-4,935,156	06-19-1990	van Konynenburg et al.	
		US-4,937,551	06-26-1990	Plasko	
		US-4,959,505	09-25-1990	Ott	
		US-4,977,309	12-11-1990	Uchida	
		US-4,992,771	02-12-1991	Caporali et al.	
		US-4,993,142	02-19-1991	Burke et al.	

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		EP-0790625-A2	08-20-1997	Daito Communication Apparatus Co. Ltd. (Sugaya)		<input type="checkbox"/> N/A
		EP-0955643-A1*	11-10-1999	Matsushita Electric Industrial Co. Ltd.		<input type="checkbox"/> N/A
		GB-1415454-A	11-26-1975	Welwyn Electric Ltd.		<input type="checkbox"/> N/A
		JP-4-15001-A	05-22-1992	Murata Mfg. Co. Ltd. (Sunahara)		<input type="checkbox"/> Abstract

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		US-5,015,824	05-14-1991	Monter et al.	
		US-5,017,243	05-21-1991	Otsubo	
		US-5,049,850	09-17-1991	Evans et al.	
		US-5,057,811	10-15-1991	Strott et al.	
		US-5,085,364	02-04-1992	Ishikawa et al.	
		US-5,089,801	02-18-1992	Chan et al.	
		US-5,142,263	08-25-1992	Childers et al.	
		US-5,166,658	11-24-1992	Fang et al.	
		US-5,194,316	03-16-1993	Horner et al	
		US-5,196,136	03-23-1993	Dishart et al	
		US-5,210,516	05-11-1993	Shikama et al	
		US-5,212,466	05-18-1993	Yamada et al.	
		US-5,216,404	06-01-1993	Nagai et al.	
		US-5,228,188	07-20-1993	Badihi et al	
		US-5,241,741	09-07-1993	Sugaya	
		US-5,247,277	09-21-1993	Fang et al.	
		US-5,258,738	11-02-1993	Schat	

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		JP-49-28594-A	08-03-1974	Matsushita Electric Industries Co. Ltd. (Ishiyama et al.)		<input checked="" type="checkbox"/> Translation
		JP-54-73260-A	06-12-1979	Tokyo Denki Kagaku Kogyo KK (Towatari et al.)		<input checked="" type="checkbox"/> Translation
		JP-56-150802-A	11-21-1981	TDK (Mano et al.)		<input checked="" type="checkbox"/> Translation
		JP-61-124104-A	06-11-1986	Matsushita Electric Industries Co. Ltd (Aikawa)		<input checked="" type="checkbox"/> Translation

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		US-5,271,548	12-21-1993	Maiwald	
		US-5,280,263	01-18-1994	Sugaya	
		US-5,291,535	03-01-1994	Baker et al	
		US-5,303,115	04-12-1994	Nayar et al.	
		US-5,347,258	09-13-1994	Howard et al.	
		US-5,351,390	10-04-1994	Yamada et al.	
		US-5,378,407	01-03-1995	Chandler et al.	
		US-5,382,938	01-17-1995	Hansson et al.	
		US-5,451,919	09-19-1995	Chu et al.	
		US-5,451,921	09-19-1995	Crawford et al.	
		US-5,488,348	01-30-1996	Asida et al.	
		US-5,493,266	02-20-1996	Sasaki et al.	
		US-5,582,770	12-10-1996	Chu et al.	
		US-5,747,147	05-05-1998	Wartenberg et al.	
		US-5,763,929	06-09-1998	Iwata	
		US-5,777,541	07-07-1998	Vekeman	
		US-5,801,612	09-01-1998	Chandler et al.	

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		JP-63-216301-A	09-08-1988	Nippon Mektron (Akatsuka et al.)		<input checked="" type="checkbox"/> Translation
		JP-63-244702-A	10-12-1988	Nippon Mektron (Tanaka)		<input checked="" type="checkbox"/> Translation
		JP-5-29111-A	02-05-1993	Matsushita Electric Ind. Co. Ltd. (Ebine)		<input type="checkbox"/> Abstract
		JP-6-283301-A	10-07-1994	Mitsubishi Materials Corp. (Yoshinori)		<input type="checkbox"/> Abstract

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		Application Number	10/701,992
		Filing Date	November 4, 2003
		First Named Inventor	Hetherton et al.
		Art Unit	3729
		Examiner Name	Thiem D. Phan
Sheet 7	of 10	Attorney Docket Number	MP1705-US4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-5,818,676	10-06-1998	Gronowicz, Jr.	
		US-5,831,510	11-03-1998	Zhang et al.	
		US-5,852,397	12-22-1998	Chan et al.	
		US-5,864,281	01-26-1999	Zhang et al.	
		US-5,907,271	05-25-1999	Hirano	
		US-5,907,272	05-25-1999	Mcguire	
		US-5,907,273	05-25-1999	Ross, Jr. et al.	
		US-6,020,808	02-01-2000	Hogge	
		US-6,104,587	08-15-2000	Banich et al.	
		US-6,130,597	10-10-2000	Toth et al.	
		US-6,172,591-B1	01-09-2001	Barrett	
		US-6,188,308	02-13-2001	Kojima et al.	
		US-6,297,722-B1	10-02-2001	Yeh	
		US-6,331,763-B1	12-18-2001	Thomas et al.	
		US-6,429,533-B1	08-06-2002	Li et al.	
		US-6,570,483-B1	05-27-2003	Chandler et al.	
		US-6,606,023	08-12-2003	Chiang et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		WO 94/01876	01-20-1994	Raychem Corporation (Graves et al.)	N/A	<input type="checkbox"/> N/A
		WO 95/08176	03-23-1995	Raychem Corporation (Fang et al.)	N/A	<input type="checkbox"/> N/A
		WO 99/45551 **	09-10-1999	Bourns Multifuse Hong Kong Ltd. (Barrett)	N/A	<input type="checkbox"/> N/A
		WO84/01259	03-29-1984	Ericsson (Olofsson et al).	N/A	<input type="checkbox"/> N/A

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(Use as many sheets as necessary)				Attorney Docket Number	MP1705-US4
Sheet	8	of	10		

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FOREIGN PATENT DOCUMENTS						
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		WO95/31816	11-23-1995	Raychem Corporation (Zhang et al.)		<input type="checkbox"/> N/A
		WO95/34084	12-14-1995	Raychem Corporation (Zhang et al.)		<input type="checkbox"/> N/A
		WO98/12715	03-26-1998	Matsushita Electric Industries Co. Ltd. (Kojima et al.)		<input type="checkbox"/> N/A
		WO98/29879*	07-09-1998	Matsushita Electric Industries Co. Ltd.		<input type="checkbox"/> N/A

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PTO/SB/08a (07-06) (modified)

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		Examiner Name	Thiem D. Phan
Sheet 9	of 10	Attorney Docket Number	MP1705-US4

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		"PolySwitch PTC Devices", Standard Product List, Raychem Corporation, May 1992.	<input type="checkbox"/>
		"PolySwitch SMD Installation Guidelines" trade brochure, Raychem Corporation, Nov. 1992.	<input type="checkbox"/>
		"PolySwitch SMD Surface Mount Devices PTC Overcurrent Protection" trade brochure, Raychem Corporation, Nov. 1992.	<input type="checkbox"/>
		"Protection of Batteries with PolySwitch Devices", Raychem Corporation, Jan. 1987.	<input type="checkbox"/>
		Coombs, <u>Printed Circuit Handbook</u> , 1996, p. 24.1 - 24.17, 40.1 - 40.4	<input type="checkbox"/>
		Harper, <u>Electronic Packaging and Interconnection Handbook</u> (1991), p. 1.37 -1.43, 8.3 - 8.5, 8.53 - 8.56, 9.1 - 9.16, 9.41 - 9.49.	<input type="checkbox"/>
		Patent Abstracts of Japan, vol. 013, no. 198 (E-756), 11 May 1989 & JP 01-020601A (JCG Corp.), 24 January 1989, abstract.	<input type="checkbox"/>
		Search Report for International Application No. PCT-US00-25118, June 13, 2001.	<input type="checkbox"/>
		Search Report for International Application No. PCT-US02-39392, May 13, 2003.	<input type="checkbox"/>
		Search Report for International Application No. PCT-US93-06480, October 7, 1993.	<input type="checkbox"/>

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		Search Report for International Application No. PCT-US94-10137, November 23, 1994.	<input type="checkbox"/>
		Search Report for International Application No. PCT-US95-05567, June 26, 1995.	<input type="checkbox"/>
		Search Report for International Application No. PCT-US95-07420, September 4, 1995.	<input type="checkbox"/>
		Standler, <u>Protection of Electronic Circuits from Overvoltages</u> , 1989, p. 133	<input type="checkbox"/>
		Sunahara, JP 40415001A (5-1992), abstract.	<input type="checkbox"/>
		U.S. Patent Application No. 07-893626 (Chandler et al.), filed June 5, 1992.	<input type="checkbox"/>
		U.S. Patent Application No. 08-816,471 (Chandler et al., filed March 13, 1997), now U.S. Patent No. 6,570,483.	<input type="checkbox"/>
		U.S. Patent Application No. 09-060,278 (Chiang et al., filed April 14, 1998), now U.S. Patent No. 6,606,023.	<input type="checkbox"/>
		U.S. Patent Application No. 09-181,028 (Graves et al, filed October 27, 1998), now U.S. Patent No. 6,651,315.	<input type="checkbox"/>
		U.S. Patent Application No. 09-364,504 (Isozaki et al., filed July 30, 1999), now U.S. Patent No. 6,358,438.	<input type="checkbox"/>

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